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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,419	03/02/2004	Cary Dikel Kornfeld		2418

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CARY DIKEL KORNFIELD
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EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/708,419

Applicant(s)

KORNFELD, CARY DIKEL

Examiner

Audrey Y. Chang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on April 3, 2006, which has been entered into the file.
- By this amendment, the applicant has amended claims 1-2, 4-5, 7-18, and 20-22.
- Claims 1-22 remain pending in this application.
- The amendment to the claims submitted on April 3, 2006 should have been submitted as a separate paper as required by 37 CFR 1.4(c). The paper has been entered. However, all future correspondence must comply with 37 CFR 1.4.

Specification

1. A examination of this application reveals that it includes **terminology** which is so different from that which is generally accepted in the art to which this invention pertains that a proper search of the prior art cannot be made. For example: the **amended term "stereoscopic pinning"** and the **amended term "stereoscopic anti-pinning"**.

Applicant is required to provide a clarification of these matters or **correlation with art-accepted terminology** so that a proper comparison with the prior art can be made. Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

At this juncture the examiner cannot find any independent reference using these terms. Although the applicant has amended the specification to give certain definition concerning the terms, however since the word "pinning" and "anti-pinning" could have various conventional meanings, the usage of these terms in the specification and the claims FAIL to give reasonable means and FAIL to provide definite scopes for the claims. The applicant is respectfully reminded that the accepted meaning for "**pinning effect**" is "some processing step involved semiconductor system", which is completely remote from the

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filed of stereoscopic viewing. The term “pinning” in dictionary means “fastening down”, which is also unrelated to the field of stereoscopic vision.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification and claims **fail** to teach how could the so-called “stereoscopic anti-pinning element” such as radiation of blue wavelength placed at the border (claims 1-16), is capable of preventing the observer from “stereoscopic anti-pinning” at the stereoscopic image display. Since the specification and the claims fail to clear define what is considered to be “stereoscopic-pinning”, “stereoscopic anti-pinning” and what exactly does an “anti-pinning element” do to “prevent the observer from the depth pinning” the claims are considered to be not enabling.

The specification and the claims also **fail** to teach how could an object “appears ... to approach a border” or “approaches to a border”, (as recited in claims 5, 7, 8, 15, 16, 21 and 22). It is not clear if the object is a moving object or what otherwise how can the object “approaches” the border? Approaching from where?

The specification and the claims also fail to teach how could “**an object**” being *stereoscopically generated* on a stereoscopic image display? A two-dimensional object will not give stereoscopic view so this object has to be *three-dimensional*. A **three-dimensional object** cannot be generated

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stereoscopically. Rather, *stereo image pair* of an three-dimensional object can be displayed on an image display and with the **help of optics** that stereoscopic vision, (which is a vision occurs in human brain), can be perceived by the observer.

The specification fails to teach how could a stereoscopic image display is capable for “stereoscopically generating an object”. A display device cannot generate an object and cannot generate an object stereoscopically since stereoscopic effect is a result of illusion created by certain optical arrangement.

The specification and the claims **fail** to teach how could the blue wavelength comprise wavelength including “*depth ambiguity*” and **fails** to teach what is considered to be “depth ambiguity” and *how could a wavelength achieve that*.

Claim Objections

4. **Claim 14 is objected to under 37 CFR 1.75(c)**, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The radiation including blue wavelength has already been claimed in its based claim 11.

5. **Claims 1-22 are objected to because of the following informalities:**

(1). The **amended** phrases “stereoscopic pinning” and “stereoscopic anti-pinning” recited in claims 1, 11 and 17 are confusing and indefinite since it is not clear what exactly do these phrases mean, which therefore *makes the scopes of the claims unclear*. **Although the applicant has amended the specification to give these phrases some meanings, however since these terms are not art-recognizable and the terms “pinning” or “anti-pinning” could have various conventional means such as hold down, fatten down or certain semiconductor process, (please see above), simply using**

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these phrases fail to provide definite metes and bounds to the claims. The applicant is required to amend the claims to state the rudimentary means concerning these phrases to the claims.

The claims at these juncture do not even define how does this “stereoscopic pinning” occur. What does it means by “preventing said viewer from stereoscopic pinning at border of said stereoscopic image display”?

(2). The phrase “generates said object from elements projected on ... screen” recited in claim 6 is confusing and indefinite since it is not clear what are these “elements”.

(3). The phrase “is activated *only* when objects *approach* the border” recited in claims 7, 15 and 21 and the phrase “vary intensity as objects *approach* the border” recited in claims 8, 16 and 22 that are confusing and indefinite since it is not clear how exactly do the objects *approach* the border? Are they moving? What makes them move? The scopes of the claims are really unclear.

(4). The phrase “objects” recited in claims 7-8, 15-16 and 21-22 is confusing and indefinite since it lacks proper antecedent basis from their respective based claims. Singular “object” is claimed in their respective based claims.

(5) The phrase “depth ambiguity” recited in claim 10 is confusing and indefinite since it is not clear what does it really mean and this makes the scopes of the claim unclear.

(6). Regarding claims 12 and 18, the phrase “for example” (or e.g.) renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

(7). The phrase “*any* display device capable of including a stereoscopic illusion” recited in claims 12 and 18 is considered to be *omnibus* which fails to provide the definite scopes of the claims.

(8). The phrase “varying in intensity” recited in claim 22 is confusing and indefinite since it is not clear the intensity is referred to what?

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by patents issued to Henkes (PN. 3,701,581) or Rickert (PN. 4,651,219) or O'Neill (PN. 5,691,843).**

The phrases “stereoscopic pinning” and “stereoscopic anti-pinning element” are not well defined in the specification and the claims they are therefore examined in the broadest interpretations “*means for suppression stereoscopic cues at the surrounding areas of the stereoscopic image pairs to enhance the stereoscopic viewing of the image pairs*”.

Henkes, Rickert and O'Neill each teaches an *image display means* for displaying stereoscopic image information of an object to allow stereoscopic vision, (81, for Henkes in Figure 5, 10, for Rickert Figures 1-2, and 211, for O'Neill Figures 3A and 4-8), and an *anti-pining element* such as a *stereoscopic frames* (83, Figure 5-7 for Henkes), a *bezel or curved regions* (6, Figures 1-2 for Rickert) or *shadowgraph frame* (such as shown in Figures 3A and 4-8, for O'Neill) wherein each of the stereoscopic frame, curved regions or the shadowgraph frame is formed at the *periphery* of the image display such that these elements *suppress* the *stereoscopic cues* of the image at the border regions (please see column 2, lines 55-64) and causes *defocusing* of the *edge* of the stereo image pairs displayed, (please see column 1 of Henkes) so that the stereoscopic vision of the object image can be enhanced.

With regard to claim 18, Henkes, Rickert and O'Neill teaches that the stereoscopic image information of the object can be displayed on the image display means by any standard and conventional stereoscopic image illusion methods.

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Each of these references has therefore **anticipated** the claims.

8. **Claims 17, 19 and 21 rejected under 35 U.S.C. 102(b) as being anticipated by the article by Mulder et al (IEEE Virtual Reality 2000 conference proceeding).**

Mulder et al teaches a method for *enhancing stereoscopic image viewing* wherein the method comprises the step of generating left eye perspective and right eye perspective object image intended for stereoscopic viewing, positioning *a cadre*, serves as the *stereoscopic anti-pinning element* such that a viewer perceive the stereoscopic anti-pinning element or the cadre at the *border* of the field of view thereby *preventing* viewer to perceive *contradiction* between the negative parallax cue and the occlusion cue to enhance the stereoscopic image viewing, (please see paragraph 3).

With regard to claims 19 and 21, the image of the object certain is “projected on the display device”. Since the contradiction of the negative parallax and the occlusion cue only occurs at the border of the display device, this means as for claim 21, this correction only needed for object image displayed at the border of the display device.

This reference has therefore anticipated claims.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title; if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-16 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Henkes (PN. 3,701,581) or Rickert (PN. 4,651,219) or O'Neill (PN. 5,691,843).**

The phrases “stereoscopic pinning” and “stereoscopic anti-pinning element” are not well defined in the specification and the claims they are therefore examined in the broadest interpretations “*means for*

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suppression stereoscopic cues at the surrounding areas of the stereoscopic image pairs to enhance the stereoscopic viewing of the image pairs". The scopes of the claims are not well defined for the reasons stated above they therefore cannot be examined with details.

Henkes, Rickert and O'Neill each teaches an *image display means* for displaying stereoscopic image information of an object to allow stereoscopic vision, (81, for Henkes in Figure 5, 10, for Rickert Figures 1-2, and 211, for O'Neill Figures 3A and 4-8), and an *anti-pining element* such as a *stereoscopic frames* (83, Figure 5-7 for Henkes), a *bezel or curved regions* (6, Figures 1-2 for Rickert) or *shadowgraph frame* (such as shown in Figures 3A and 4-8, for O'Neill) wherein each of the stereoscopic frame, curved regions or the shadowgraph frame is formed at the *periphery* of the image display such that these elements *suppress* the *stereoscopic cures* of the image at the border regions (please see column 2, lines 55-61) and causes *defocusing* of the *edge* of the stereo image pairs displayed, (please see column 1 of Henkes) so that the stereoscopic vision of the object image can be enhanced.

Each of these references has met all the limitations of the claims with the exception that they do not teach explicitly that the anti-pinning element is provided by emitting blue light radiation. However **Henkes** teaches explicitly that the stereoscopic frame is provided to *defocus* the edge of the image at the border and to *delocalize* the image information with respect to the surrounding in order to enhance the stereoscopic vision of the object image, (please see column 1). Henkes teaches that the stereoscopic frame may comprise plates (61-66, Figures 6-7) with different degrees of transparency. **Rickert** teaches that the anti-pinning is achieved by providing means to *suppress, hide or camouflage* the image display plane by suppressing the stereoscopic cues in the areas surrounding the image plane and to *terminate* the outer periphery of the surrounding the areas in the image plane other than the image, (please see column 2, lines 55-64). **O'Neill** teaches that the shadowgraph frame is provided as light-blocking frame such that it cause the image appears to recede from the frame which therefore enhances the depth perception, (please see column 3). These suggest that any means will cause defocusing or blurring the border of the

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image will serve as the “anti-pinning element” to enhance the stereoscopic vision. And it is obvious to one skilled in the art to including certain the means to emit radiation of blue wavelength since it certainly will have the shading effect for defocusing the edge, suppressing the stereoscopic cues at the surrounding and form light blocking frame to achieve the same effect as an alternative means and easy means, (since proving blue light is very simple) to enhance the depth perception.

With regard to feature concerning screen, the cited references all recite a screen for displaying the image. With regard to feature concerning varying intensity, Henkes teaches explicitly that the stereoscopic frame has varying transparency or varying intensity.

With regard to claim 12, Henkes, Rickert and O'Neill teaches that the stereoscopic image information of the object can be displayed on the image display means by any standard and conventional stereoscopic image illusion methods.

11. Claims 1-16, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article by Mulder et al (IEEE Virtual Reality 2000 conference proceeding).

Mulder et al teaches a method for *enhancing stereoscopic image viewing* wherein the method comprises the step of generating left eye perspective and right eye perspective object image intended for stereoscopic viewing, positioning *a cadre*, serves as the *stereoscopic anti-pinning element* such that a viewer perceive the stereoscopic anti-pinning element or the cadre at the *border* of the field of view thereby *preventing* viewer to perceive *contradiction* between the negative parallax cue and the occlusion cue to enhance the stereoscopic image viewing, (please see paragraph 3). Ambiguous depth is implicitly created by the presence of the cadre.

This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the cadre is provided by using blue light radiation. However this reference does teach explicitly that the **cadre** could be a virtual cadre with *color that closely matching* the screen surround,

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(please see second page paragraph 3), it would then have been obvious to one skilled in the art to use means such as blue light means to match the color of the cadre with the surrounding screen (i.e. dark background) to properly clip the image so that an enhanced stereoscopic image can be viewed, (please see pictures shown at the last page of the reference).

With regard to claims 5 and 20, Mulder et al teaches that the cadre is placed in front of the display device so that observer can perceive the cadre at the peripheral or the border of the field of the view of the display device however it does not teach explicitly that it is placed at the periphery of the display device. But such modification is considered to be obvious to one skilled in the art for the benefit of properly fixing the cadre with the display device to ensure the good alignment. Since the contradiction of the negative parallax and the occlusion cue only occurs at the border of the display device, this correction only needed for object image displayed at the border of the display device. The modulation of the intensity is considered obvious to better matching the color.

With regard to claim 6, the image of the object certain is “projected on the display device” and the display device has a screen.

With regard to claims 12 and 18, the left eye perspective image and right eye perspective image are certainly generated by the standard method as described in claims 12 and 18.

Response to Arguments

12. Applicant should submit an argument under the heading “Remarks” pointing out disagreements with the examiner’s contentions. Applicant must also discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

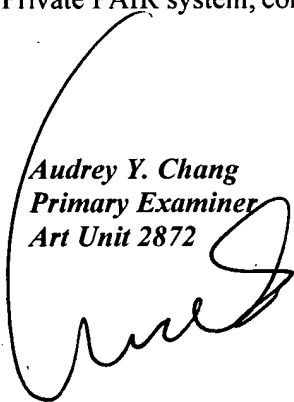
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.